CITY OF BLOOMINGTON MINNESOTA

Carbon Monoxide Information Handout

Worried about carbon monoxide?

Every heating season we hear stories about people dying or nearly dying from carbon monoxide (CO) poisoning. These tragedies are often preventable.

The warning signs of CO build-up include frequent headaches, burning eyes and nose, and gas flames that burn yellow, not blue.

Basics

The furnace, water heater, gas stove, fireplace and other fuel-burning appliances use large amounts of air in the combustion process. A home needs a reliable supply of outside air for these appliances to run safely and efficiently. This air supply is called combustion air and is required on all new homes.

The combustion air duct is typically a flexible gray or black tube that terminates near the base of the furnace. It's important that this supply remain unobstructed. The cold air draft that may be coming from this tube prevents CO build-up. It's possible and legal for the combustion air to be connected to the cold-air return on a home's heating system. If this is the case, a permanent opening above the furnace on the main air plenum is required. Don't tape over or obstruct this opening.

Causes of CO build-up

1. Lack of combustion air – back-drafting

   Most fuel-burning appliances use a natural draft; the hot gases produced by fire go up the flue and air is consumed in the burning process. In an air-tight house with weather-stripping, caulking, insulation and other energy saving measures, a negative pressure, or vacuum, is created.

   The furnace or other appliances demand combustion air. The vacuum created tries to pull air from outdoors – this is called back-drafting. The largest and most unobstructed opening to the outdoors is the furnace flue. The vacuum pulls the hot gases going up the flue into the furnace room and causes CO build-up.

   Other causes of air depletion are ceiling light fixtures, kitchen and bathroom exhaust fans, gas-burning stoves and unvented fuel-burning space heaters. Space heaters, such as kerosene burning appliances, should not be used indoors.

   If you suspect your furnace is short of combustion air, open a window in the furnace room and call a heating system professional. *Opening a window in an upper level could worsen the problem as more air escapes and creates more negative pressure in the lower levels.*

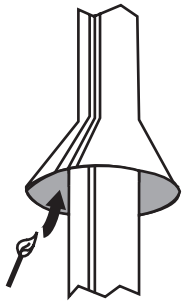
2. Flue blockage

   Occasionally debris, corrosion or ice build-up can block the flue. In extreme cold, moisture in the hot gases can freeze around the vent terminal above the roof and cause blockage. If concerned about blockage, open a furnace room window and call a heating professional. It's good to have your flue checked for blockage at least once a year.

The in-home test

A quick and fairly accurate way to test a heating system's drafting ability and operation is ***shown at the right.***

To set up for the test, have all fuel burning appliances operating simultaneously and the damper closed on wood burning fireplaces. Turn on all exhaust fans and close all windows and exterior doors.



Spillage test: Flame or smoke drawn into draft hood if furnace is venting properly.

Open all interior doors. Run the hot water to turn on the water heater. Allow appliances to run two minutes and then place a match or smoke producing object next to the draft hood. If smoke is drawn up, the hood is operating properly. If not, the combustion air may be undersized or there may be blockage. Open a furnace room window and call a professional.

Attached garage

Always warm your car up outside and close the overhead door. If your house has negative pressure, car exhaust and other pollutants can be drawn in through the door between the garage and the house.

Wood burning fireplaces

A smoky fireplace that has difficulty building a good draft may indicate lack of combustion air. Wood burning uses large amounts of air so additional outside air may be needed to prevent back-drafting. A lower level fireplace, where negative pressure zones exist, can be especially susceptible to back-drafting and CO build-up.

Carbon monoxide detectors

CO detectors are relatively inexpensive and are the most accurate means of detecting CO build-up. They are generally best located in family rooms, kitchens or other high use areas. Follow the instructions for the best location.

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